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ABSTRACT

This policy brief reviews the evolution of comprehensive school reform (CSR) and the development of CSR models, describes the AEL-CREP (Center for Research in Educational Policy) research project and its findings, and discusses policy implications. Over the past 2 decades, CSR has evolved from theory to pilot project to mandate to widespread implementation. Its evolution was catalyzed by reports, such as the 1983 report "A Nation at Risk." The AEL-CREP research project was undertaken to add to the body of empirical evidence on the effectiveness of CSR models. Twelve CSR schools were studied and compared with matching non-CSR control schools that shared certain characteristics. Data were collected annually. Findings showed that achievement gains became evident in the third year of implementation; that emerging differences in instructional practices seemed related to selected CSR models; and that different models evidenced different aspects of instruction, classroom practice, and teacher-student-knowledge relationships. This brief strongly recommends that school and policy leaders manage school and community expectations from the outset so that reforms are given sufficient time to produce positive changes, considering that student achievement gains were not evident until the third year of implementation. (Contains 16 references.) (RT)

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EA 032 341

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Effects of Comprehensive School Reform in 12 Schools

Results of a Three-Year Study

David Holdzkom

In 1999, AEL and the Center for Research on Educational Policy (CREP) at the University of Memphis initiated a three-year research project to examine specific school-level implementations of comprehensive school reform (CSR). The study involved 12 of the 140 schools within AEL's service region (Kentucky, Tennessee, Virginia, and West Virginia) that received funding in the initial round of the Comprehensive School Reform Demonstration (CSRD) program and 12 matched schools not engaged in comprehensive reforms. Researchers compared the CSR schools and the control schools to learn about (1) the effects of comprehensive school reform on school improvement and (2) the differences comprehensive school reform models create in schools over time.

This Policy Brief reviews the evolution of comprehensive school reform and the development of CSR models, describes the AEL-CREP research project and its findings, and draws on scientific research to frame policy implications.

The Evolution of Comprehensive School Reform

Over the past two decades, comprehensive school reform has evolved from theory to pilot to mandate to widespread implementation. It evolved, in large part, as a response to reports such as *A Nation at Risk* (The National Commission on Excellence in Education, 1983), which stimulated a variety of efforts by many individuals and organizations to make education more effective for more students. For example, some states raised graduation requirements, increased teacher training requirements, and launched efforts to assess and improve the quality of their schools. Universities and research centers developed programs to

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improve various aspects of education. Communities called for more local control of schools. Professional associations of educators began identifying the necessary skills and knowledge appropriate to each discipline. Many of these efforts contributed to the emergence of standards-based education. They also sparked interest in determining whether comprehensive, or whole-school, reform might be more effective than what some called "piecemeal" approaches.

Until just a few years ago, most school reform efforts focused on individual subject matter areas (e.g., mathematics, science, reading) rather than encouraging educators to create change throughout a school's system by looking across curricular areas and considering the effects of management, culture, staff development, and community involvement. Several universities and research centers, however, had been developing comprehensive school reform models and testing these models in selected schools.

The Obey-Porter Comprehensive School Reform Demonstration (CSRD) legislation (Pub. L. No. 105-78, 1998) presented an opportunity for hundreds of schools across the nation to try comprehensive reform models. The CSRD program provided a minimum of $50,000 per year in demonstration grants to schools implementing such reforms. The legislation was intended to stimulate schoolwide change, covering virtually all aspects of school operations. By providing financial incentives, it assisted schools in need of improvement, particularly Title I schools, in implementing reforms designed to help all children meet challenging state content and performance goals. The National Clearinghouse for Comprehensive School Reform (NCCSR) uses the following points to characterize CSR:*

- a systematic approach to schoolwide improvement that incorporates every aspect of a school—from curriculum and instruction to school management
- a program and a process that is designed to enable all students to meet challenging academic content and performance goals
- a framework for using research to move from multiple, fragmented educational programs to a unified plan with a single focus—academic achievement
- a product of the long-term, collaborative efforts of school staff, parents, and district staff

The commitment of Congress and the U.S. Department of Education to improving schools through comprehensive school reforms is underscored by CSR's incorporation into the No Child Left Behind Act of 2001 (NCLB) (Pub. L. No. 107-110, 2002) as a formula grant program, with funding levels based on districts' Title I allocations. As was the case with CSRD funds, schools can use CSR funds to support reform efforts that are "homegrown" (not externally developed) or reforms that incorporate one or more externally developed, targeted, non-schoolwide interventions to address 9 (now 11) essential components of comprehensive school reform:

1. proven methods and strategies based on scientifically based research*
2. comprehensive design
3. professional development
4. measurable goals and benchmarks
5. support within the school
6. support for principals and teachers**
7. parental and community involvement
8. external technical support and assistance
9. annual evaluation
10. coordination of resources
11. strategies that improve academic achievement**

As NCLB is rolled out, schools must meet even more rigorous standards, as they will be required to show consistent test score increases, or Adequate

*For an in-depth discussion of CSR definitions, visit NCCSR at www.goodschools.gwu.edu/about_csr/index.html.

* as amended in 2002

** added in 2002

Yearly Progress (AYP), across curriculum areas and population subgroups. To comply with NCLB, districts' school improvement efforts must employ strategies developed from scientifically based research. This need is prompting schools to search for solid information on successful reform efforts that can be replicated within their school communities—a type of information that is in short supply.

Existing Evidence of Comprehensive School Reform's Effectiveness

Although CSRD funding was predicated on the use of research-based models, research on the effectiveness of CSR models lags far behind the interest and need (American Institutes for Research, 1999; Nunnery, 1998; Borman, Hewes, Overman, & Brown, 2002). To date, five major reviews of comprehensive school reform models have been conducted. Generally, the following factors have been identified as affecting the success or failure of externally developed comprehensive reforms: (1) Schools that implement their selected models with the greatest fidelity are more likely to see positive effects; (2) Models that are more clearly defined tend to be implemented with greater fidelity and, in turn, have stronger effects on teaching and learning; (3) Well-implemented reforms usually have strong professional development components, including follow-up support that addresses specific classroom-level problems in implementing change; and (4) Teachers and administrators must support or even coconstruct the selected reform design (Borman, et al. 2002).

One of the first and most often cited research reviews was conducted by the American Institutes for Research (AIR), which reviewed the claims for 24 comprehensive school reform models. Of these, only 3 had evidence that met the AIR criteria for "strong evidence of positive effects on student achievement," while 5 were determined to have "promising evidence." Eight of the programs had no evidence of research on the student achievement effects, while 2 models had weak, mixed, or no effects on student achievement. The remaining 6 were found to have marginal evidence of positive effects on student achievement (AIR, 1999).

In 2002, a comprehensive synthesis of existing research on 29 reform models' effectiveness yielded similar results. Geoffrey Borman and associates at the University of Wisconsin-Madison applied a rigorous methodology of research review called meta-analysis to categorize the models according to levels of effectiveness in raising student achievement. Researchers classified 3 models as having the strongest evidence of effectiveness, 3 as showing highly promising evidence of effectiveness, 6 as showing promising evidence, and 17 as "in need of more research" (Borman, et al., 2002). The researchers concluded that the overall effects of comprehensive school reform appear promising, but cautioned that determining the specific effects of particular models requires careful examination of how they are evaluated.

The AEL-CREP CSRD Research Project

To enhance the body of empirical evidence on the effectiveness of CSR models, AEL and the Center for Research in Educational Policy (CREP) at the University of Memphis designed a research study that matched CSRD schools with control schools and tracked them over three years. The study focused on five specific models of comprehensive school reform. While these models may be considered representative of the research and education communities' definitions of CSR, the reader should keep in mind that this research discusses schools benefiting from CSRD grants and the schools' development or adoption and implementation of models in reaction to legislative requirements.*

* Consult the set of three reports (one for each year of the study) for detailed information. *The Effects of Implementing Comprehensive School Reform Models in 12 Elementary Schools*, by Allan Sterbinsky, Steven M. Ross, and Doris Redfield, can be obtained from AEL, P.O. Box 1348, Charleston, WV 25325-1348 or 800-624-9120.

How the Study Was Conducted

In the four-state region served by the Regional Educational Laboratory at AEL—Kentucky, Tennessee, Virginia, and West Virginia—approximately 140 schools received CSR funding in the initial round of CSRD grants, with each receiving a minimum of $50,000 per year for three years. A variety of demographic criteria were applied to select the 12 schools that participated in the study. Each had adopted one of five comprehensive reform models: Different Ways of Knowing (DWoK), Success For All (SFA), Core Knowledge (CK), Direct Instruction (DI), or Balanced Early Literacy Initiative (BELI). These reform models emphasize different aspects of education, as described in the sidebar on page 7.

Each study school was matched with a control school with which it shared certain characteristics (size, student demography, and the like) but which had not chosen to implement a whole-school reform model. By analyzing implementation and outcome data collected from the study schools and the control schools, researchers set out to identify the degree to which the reforms brought about change in student outcomes, teachers' practice, and teachers' perceptions that characteristics of the school—e.g., order, leadership, support—had changed. Recognizing that important changes were unlikely to be realized in the short term, the study team committed to a three-year study of the the models' implementation.

Data were collected from the schools using a variety of instruments that tested students' reading ability, observed teachers in their classrooms, and surveyed and interviewed teachers and staff about their perceptions of their own schools and situations. The data were collected annually so change could be tracked over both the short and the long term. The researchers posed two questions:

1. What differences in classroom practices, school climate, and reading achievement exist between CSR and control schools from 1999-2002 after the effects of location (rural and urban) have been controlled?
2. What differences exist among CSR models in terms of classroom practices, school climate, and student achievement after at least three years of implementation?

Terminology Used in the Study

In developing a series of survey instruments used in the study, the University of Memphis employed several terms that are useful in describing aspects of school climate and attributes of school reform models. For example, the School Climate Inventory (SCI), an instrument developed at CREP in 1989 (Butler & Alberg, 1991), has been used for school-based improvement planning in schools and districts in numerous states, and has proven to be especially valuable for monitoring and managing change initiatives. The SCI assesses seven dimensions that are logically linked with factors associated with effective school organizational climates:

- order: the extent to which the environment is ordered and appropriate student behaviors are present
- leadership: the extent to which the administration provides instructional leadership
- environment: the extent to which a positive learning environments exist
- involvement: the extent to which parents and the community are involved in the school
- instruction: the extent to which the instructional program is well developed and implemented
- expectations: the extent to which students are expected to learn and be responsible
- collaboration: the extent to which the administration, faculty, and students cooperate and participate in problem solving

Another instrument, the Comprehensive School Reform Teacher Questionnaire (CSRTQ),

is a modification of an instrument originally developed in 1996 for the formative evaluation of Memphis City Schools' implementation of New American Schools restructuring designs (Ross et al., 1997). For use in schools undergoing comprehensive change, the instrument has been modified to include generally accepted school reform criteria such as the 11 CSR criteria. The CSRTQ examines four dimensions:

- support: the adequacy and value of support provided to the school
- capacity: the presence of available material, time, and human resources
- pedagogy: changes in classroom practices
- outcomes: impact on student achievement and enthusiasm, parent/community involvement, and collaboration

The final section of the CSRTQ includes implementation benchmarks designed to rate the level of model implementation in six areas: curriculum, instruction, parent/community involvement, allocation of resources, professional development, and evaluation.*

Findings

Analysis of the data collected through classroom observation, interviews with teachers and principals, and surveys about perceptions revealed the following:

Achievement gains became evident in the third year of implementation. Perhaps the most compelling finding was that on some measures, reading achievement among the students in the CSR schools was notably higher—to a statistically significant level—than it was for students in the non-CSR schools. This finding is especially important because the significantly higher achievement did not appear until the third year of the study. Therefore, it can reasonably be inferred that if the CSR schools had not continued the reform efforts beyond year two, they would not have seen the student achievement gains that they did. This finding reinforces the proposition put forward by many who study school reform that providing enough time for the effects to be felt is crucial.

Faculty and staff at schools implementing comprehensive reforms perceived some elements of school climate as being more positive. Differences associated with school climate were noted between CSR and control schools. CSR schools' faculty and staff were more likely to be positive in their perceptions of order, instruction, and expectations than were staff in control schools. In urban CSR schools as compared to urban control schools, teachers were significantly more positive about leadership and expectations.

Emerging differences in instructional practices seemed related to selected comprehensive school reform models. Moreover, there were differences in instructional practices between the CSR schools and the control schools and between urban and rural schools. After three years of implementation of the reform models, teachers at CSR schools were more likely to use direct instruction and ability grouping, higher-order questions, sustained writing, and student discussion than were teachers at the control schools. These teaching practices are all emphasized (to a greater or lesser degree) by the particular reform models implemented.

Different models evidenced different aspects of instruction, classroom practice, and teacher-student-knowledge relationships. Because the models emphasized different aspects of instruction, classroom practice, and teacher-student-knowledge relationships, it would not be surprising to find differences that could be traced to specific models. When researchers examined differences among four of the five models (DWoK was implemented in only one school in the study, so it could not be

* For more information on these instruments, contact the Center for Research in Educational Policy at the University of Memphis, 325 Browning Hall, Memphis, TN 38111-9861, 901-678-2310.

included in the model analysis), what they found among study schools supported this expectation:

- Balanced Early Literacy Initiative (BELI) teachers used parent/community involvement and individual tutoring significantly more often than did other teachers, and had higher perceptions of expectations and order.
- Core Knowledge (CK) teachers used more direct instruction, work centers, higher-level questioning, hands-on learning, and sustained writing than did other teachers, although the CK model does not require the use of specific pedagogic practices. At CK schools, teachers' perceptions of expectations, order, pedagogy, and collaboration were significantly higher, but their perceptions of support were the same as other models.
- Direct Instruction (DI) schools reported lower levels of implementation of the reform than did schools using other models. DI teachers also reported lower perceived levels of pedagogy, order, involvement, expectations, and outcomes than teachers using other models. DI schools were observed to use more ability groups than schools using other models.
- Success For All (SFA) schools used more student-centered classroom practices than did other schools, and SFA teacher perceptions of order were lower. SFA teachers reported higher levels of capacity and pedagogy, but their perceptions of support were the same as in other models.

It should be remembered that each CSR school chose a reform model it believed would best suit its particular needs and circumstances. Not surprisingly, each school demonstrated specific aspects of its chosen model more than did schools using other models.

Conclusions and Issues for Further Study

The improvements made through the CSR implementations evaluated in this project, with respect to both student achievement and instructional practice, are visible and supported by the findings described here. The fact that student achievement gains were not evident until the third year of implementation (other studies have shown it might take as much as four or five years) underscores the need for school and policy leaders to manage school and community expectations from the outset so that reforms are given sufficient time to effect positive changes.

NCLB legislation seems to encourage schools to broaden the scope of comprehensive school reforms in a different way. It de-emphasizes reliance on reform *models* and encourages schools to focus on *strategies* that address the 11 components named in the legislation, with a specific focus on raising student achievement. Schools may continue to use commercial or "prepackaged" reform models as part of their overall strategy for school improvement, but the shift in the legislation's language might encourage more schools to develop "homegrown" reform models. One model in the AEL-CREP study, BELI, is a locally developed model that centers on a reading program but also incorporates other strategies to meet all CSR criteria. Additional research on the demands and effectiveness of such homegrown models could help schools determine the best course of action for their particular circumstances.

The NCLB legislation also creates a need for research that focuses on strategies rather than specific models, as schools and districts seek clear information on the relative successes of different CSR intervention methods. Perhaps equally important will be studies that specify the school settings and parameters within which specific strategies are effective.

The AEL-CREP study opens the door to another CSR question that the education research community will grapple with in the coming months and years of CSR implementation: Once a strategy proves to be effective, what policies and

Overview of CSR Models in This Study

Success For All (SFA) was developed at the Johns Hopkins University and uses preventive and early intervention techniques to ensure that every child is a successful reader and student. SFA has nine components: reading curriculum including at least 90 minutes of daily instruction with homogeneous groups across age lines, eight- week assessments, tutoring, early learning program for prekindergarten and kindergarten students, cooperative learning, a family support team, a facilitator, staff support teams, and training and technical assistance on specific topics. (Success For All Foundation, 2000)

Different Ways of Knowing (DWoK) was created by the Galef Institute and is based on five philosophical components: positive expectations for the academic and social achievement of all children, thematically integrated instruction across disciplines, active student participation, early intervention, and parent participation in the classroom and at home. The curriculum integrates history and science with literature, language arts, math, science, and the arts. The arts focus is used as a pathway to all disciplines. (The Galef Institute, 2002)

Balanced Early Literacy Initiative (BELI) is a locally developed model that is based on the components of the Early Literacy Initiative from Ohio State University. It is an early intervention program (K-4) designed to provide all students with the experiences and instruction necessary to help children become good readers at an early age. Program components include: Rreading aloud, shared reading, guided reading, independent reading, shared writing, interactive writing, guided writing, and independent writing. In addition to these components, Success By Seven (one-on-one structured lessons) is provided to all at-risk first graders.

Direct Instruction (DI) was developed by Siegfried Engelmann at the University of Illinois in the 1960's and uses tightly scripted and interactive lesson plans with small, homogeneous groups of children based on their performance levels. The curriculum covers reading, language arts, and math,; and uses frequent assessments are used. (SRA/McGraw-Hill, 2002)

Core Knowledge (CK) is based on the premise that all citizens need a common knowledge base (CK) to function well in society. Schools provide this shared knowledge to students by using a curriculum framework that specifies important knowledge in language arts, history, geography, math, science, and the fine arts that is sequenced within and between grades. (Core Knowledge Foundation, 2002)

practices must be put in place to sustain improvements and create lasting success? An analysis of reform efforts in Memphis City Schools between 1995 and 2001 suggests that successful efforts are the result of a delicate balance of administrative and teaching staffs' readiness for change, attention to local issues within the school, buy-in from all stakeholders, professional development, and focus on the most pressing needs of the school (Ross, 2001). Long-term studies can yield the kind of scientifically based data schools and policymakers need to successfully sustain school improvements.

Yet another issue that needs further research is the correlation between school climate and academic achievement/Adequate Yearly Progress. Because school climate is an important component of most CSR models, research on this factor of CSR could yield important findings for school leaders and policymakers as they create or support strategies for school improvement.

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